7.15.4 Performance of RRD and MLRD Loops

The RRD and MLRD plans employ similar loading schemes, have the same end-section and bridged-tap rules, and are compatible with any combination of cable gauges. These plans offer improved transmission performance over older plans and give approximately the same minimum loop ratings, that is, TOLR and ROLR (see Section 7.4.1).

Figure 7-23 shows the TOLR and ROLR for maximum-loss RRD loops as a function of loop length. The figure applies in the worst case with maximum cable resistance, bridged-tap, and end section. Dashed lines show the design limit objectives for TOLR and ROLR. The RRD plan results in improved ratings over the resistance design plan in the 12- to 18-kft region (where maximum loss occurs) and comes closer to meeting the design limit objectives in this zone. Performance offered by the long-route design on MLRD plans differs primarily in the 1500- to 1600-Ω resistance range where the MLRD plan provides gain, resulting in better performance.

7.15.5 The Carrier Serving Area Concept

The evolution to a network that can readily provide digital services via loop facilities led to the Carrier Serving Area (CSA) concept. A CSA is an area that is or may be served by DLC. DLC may be either stand-alone (UDLC) or integrated into the end office switch (IDLC). All loops within a CSA are nonloaded. They are capable of providing on a nondesigned-basis conventional, voice-grade message service; digital data service up to 64 kbps; Digital Subscriber Lines (DSLs) for ISDN; and most locally switched, 2-wire, voice-grade special services. Ordinary channels (pair-gain pairs) on the DLC system have a loss of 2 dB or less, thus allowing for attenuation in the physical cable within the CSA. Loop length in the CSA is limited by attenuation, not by dc resistance. Bridged-tap lengths are controlled to preserve capability for high-speed, digital operation. CSA design is now used for most loop growth.

The CSA design plan is summarized in Table 7-11. The table indicates that within the CSA the maximum allowable loop length involving 26-gauge cable is dependent on the length of bridged-tap. This dependency is illustrated in Figure 7-24.

7.15.6 Digital Subscriber Line

The DSL for ISDN Basic Rate Access (BRA) transmits 160 kbps in both directions simultaneously on a nonloaded cable pair. The DSL is intended to operate with cable loss of up to 42 dB at 40 kHz. To minimize crosstalk between DSLs in the same cable binder group, the signal is recoded into 2 Binary 1 Quaternary (2B1Q) form, that is, two binary pulses become one quaternary pulse on the line (see Section 12). Almost all loops designed to resistance design criteria, whether RRD or its predecessors, will transmit a DSL signal out to 18 kft. The customer provides a Network Termination 1 (NT1) device on the customer side of the demarcation point to operate into the DSL transceiver in the central office. With suitable channel units, a DSL can be extended out to a CSA on DLC facilities.

CERTIFICATE OF SERVICE

I, Kay D. Dallosta certify that I have sent a copy of the foregoing "Opposition of Network Access Solutions to Petitions for Reconsideration" was hand delivered on October 5, 1998 to:

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and the same was sent by first class mail on October 5, 1998, postage prepaid, to each of the following:

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